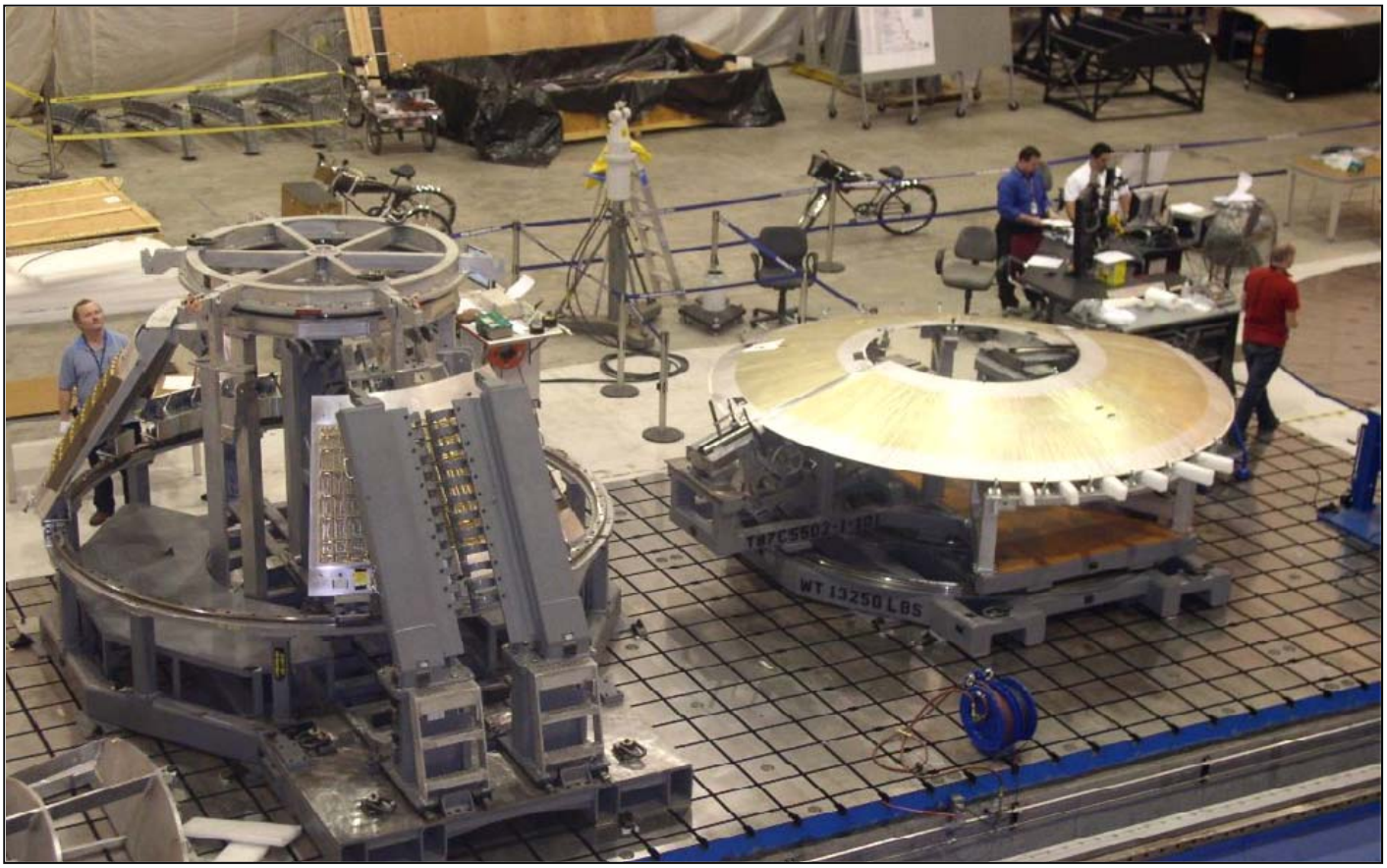
Orion Crew Exploration Vehicle
Weekly Accomplishments

Week ending May 30, 2009



Ground Test Article (GTA) confidence panel welding activities to support the Gore to Gore Panel were successfully completed. Two GTA Aft Bulkhead panels were received. Crew Module hardware and parts received to date include: the cone and aft bulkhead confidence panels, SK cone panels (2) and barrel panels (4), GTA cone panels (3), cone longerons (6).

The thermal environment testing of the PA-1 drogue mortar and the new bracket assembly is complete. The adapter plate will be used to attach the assembly to the shaker table for vibration testing at Dryden Flight Research Center. The pilot mortar bracket was turned around by Langley Research Center and is onsite at Johnson Space Center. The pilot mortar will be installed on the bracket and undergo similar thermal testing. Shown in photo near right is the drogue mortar being prepared for thermal testing and far right, the drogue mortar in the thermal chamber.

The 130 ft - 8 in tall, 426,000 lb gantry was rolled on the gantry rails from the launch position pad (west pad) to the service position on the launch pad, and back. The gantry was easily moved for the roll test using a tug, and initial reports indicate no anomalies.

The Plumbrook Station Mechanical Vibration Facility (MVF) pit rebar placement of the rock anchor extensions, specialized reinforcements for actuator locations, and assembly of tension anchors continues. The seismic mass reinforcement is complex and includes horizontal rebar layers and vertical extensions of rock and tension anchors. Future locations of the Orion vertical actuators can be visualized in the foundation preparation photos below by the circular pattern of rock anchors affixed with cans (at first pour height) that will eventually contain bearing plates for pre-tensioning these rock anchors once the pour has cured. Acoustic testing was completed at NRC in Ottawa, Canada. Testing was successful in meeting all primary goals of characterizing the gas jet acoustic performance (varying pressures, nozzle diameters, reflector domes and plates, chevrons, etc.).

Communications and Public Engagement

Ray Crum, Orion program technical director at Honeywell Aerospace, presented a briefing on the integrating Commercial Off-The-Shelf (COTS) products into next-generation spacecraft applications at the Military & Aerospace Electronics Forum held June 1 at the San Diego Convention Center.
An article on Ray's briefing entitled *Honeywell engineers design COTS hardware into Orion advanced avionics design* can be read in the online edition of Military & Aerospace Electronics at:
http://mae.pennnet.com/display_article/363746/32/ARTCL/none/ONEWS/1/Honeywell-engineers-design-COTS-hardware-into-Orion-advanced-avionics-design/